

# **EXHIBIT 3**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

CONFIDENTIAL – TO BE FILED UNDER SEAL  
SUBJECT TO PROTECTIVE ORDER

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IN RE: HIGH-TECH EMPLOYEES ANTITRUST  
LITIGATION

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No. 11-CV-2509-LHK

THIS DOCUMENT RELATES TO:

ALL ACTIONS

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SUPPLEMENTAL EXPERT REPORT OF EDWARD E. LEAMER, PH.D.

May 10, 2013

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## I. Introduction, Assignment, and Summary of Conclusions

1. I have been asked by counsel for Class Plaintiffs in this matter to respond to the following questions regarding my prior analysis and further analysis that can be conducted based on the available data in this case. I have been asked to focus my response on the employees belonging to the proposed Technical, Creative and R&D Class ("Technical Class") identified in my initial report.
2. **Question #1:** Does the total compensation of Technical Class employees in specific job titles move together over time, further confirming the existence of a somewhat rigid pay structure at each Defendant?
3. **Answer:** When asked in the deposition (p283) "Could a nonrigid wage structure, as you've defined it, lead to parallel lines?" I responded to what I thought to be a hypothetical with "Yes, it could." I should have added that this would require highly unusual external labor market conditions which dictated the parallel movements of vast numbers of titles. Markets typically are not so orderly, and prices of, for example, gold, silver, copper and zinc do not normally move in parallel. For that reason, I regard the parallel movements of compensation for so many titles not only to be consistent with a "somewhat rigid wage structure" but also evidence specifically in favor of the hypothesis that internal equity played an important role in determining compensation in all these firms. In this report, I confirm this opinion with two additional empirical studies. I have estimated regression models that allow me to separate the contributions of internal and external forces, and found that the internal forces are evident but the external forces are not. I have also compared average compensation for the Technical Class of titles and the non-technical employees for all the defendants. I found that the compensation curves of these two groups within each firm are highly parallel while the compensation curves for the same group from two different firms move in a much more disparate way. This again is saying that the internal forces are evident but the external forces are more difficult to detect.
4. In this Report, I present correlations that compare the movement *over time* of the average compensation of each title with the average compensation of the firm's Technical Class. To accommodate titles that cannot be accessed on a title-by-

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title basis due to insufficient data

Term	Percentage
GDP	95
Inflation	93
Interest rates	91
Central bank	89
Monetary policy	87
Quantitative easing	85
Institutional investors	83
Fintech	81
Algorithmic trading	79
Blockchain	77
Smart contracts	75
Regulation	73
Artificial intelligence	65

5. **Question #2:** Do the data show additional evidence that internal factors such as internal equity partly drove the Defendants' compensation structures, as opposed to only external market forces?

6. **Answer:** I have analyzed a model of sharing of compensation effects, title by title, within Defendant firms relative to movements of other Technical Class employees compensation. Again, to accommodate titles that cannot be accessed title-by-title [REDACTED] I also analyzed the compensation of relatively narrow groups of employees against the compensation of the overall Technical Class employees.

7. Specifically, I report below estimated multiple regression models that explain the year-by-year increases in average compensation at the title level in terms of four explanatory variables: (1) increases in average Technical Class compensation; (2) the previous year's ratio of average Technical Class compensation divided by the average title compensation; (3) the previous year's ratio of firm-wide average revenue divided by the average title compensation; (4) the percent change in software jobs in the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (hereafter: San Jose MSA).

8. [REDACTED]

9. **Question #3:** Do the data show the existence of large groups of class members who necessarily would not have been harmed by a restriction on cold-calling?

10. **Answer:** No. I have performed the above-mentioned statistical analyses separately for distinct subgroups of employees grouped by compensation level. I do not find persuasive evidence to suggest that there are sizeable groups whose compensation might have been disconnected from Defendants' somewhat rigid compensation structure. [REDACTED]

11. **Question # 4:** Is it possible to identify and exclude from the Technical Class job titles based on a lack of these positive correlative relationships?

12. **Answer:** No. [REDACTED]

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13. In sum, the statistical analysis I conduct here--in conjunction with the economic and econometric evidence in my original reports--supports my original finding of a somewhat rigid pay structure at each Defendant that would have transmitted the effects of the agreements broadly, including throughout the Technical Class.

## II. Defendants' Use of Compensation Structures

14.

A horizontal bar chart with six bars of different lengths. The bars are black and set against a white background with thin black horizontal grid lines. The bars are of varying lengths, with the longest bar on the far right and the shortest bar on the far left.

15.

Topic	Percentage
The Internet	85%
Smartphones	92%
Cloud Computing	78%
Big Data	88%
Machine Learning	82%
Artificial Intelligence	90%
Blockchain	87%
Quantum Computing	89%
The Internet	85%
Smartphones	92%
Cloud Computing	78%
Big Data	88%
Machine Learning	82%
Artificial Intelligence	90%
Blockchain	87%
Quantum Computing	89%

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16.

17.

### **III. Empirical Methodologies for Exploring the Somewhat Rigid Salary Structure**

#### **A. Choice of Aggregation Level**

18. [REDACTED]

19. [REDACTED]

20. [REDACTED]

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[REDACTED]

[REDACTED]

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The figure consists of five horizontal panels, each containing a series of black horizontal bars of varying lengths. The panels are arranged vertically. The first panel has a small black square at the top left. The second panel has two small black squares at the top left. The third panel has a small black square at the top left. The fourth panel has a small black square at the top left. The fifth panel has a small black square at the top left. The bars are black and extend across the width of each panel. The lengths of the bars vary, with some being very long and others very short. The bars are positioned in a staggered pattern within each panel.

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Term	Percentage
GMOs	85%
Organic	95%
Natural	85%
Artificial	95%
Organic	95%
Natural	85%
Artificial	95%
Organic	95%
Natural	85%
Artificial	95%
Organic	95%
Natural	85%
Artificial	95%

Term	Percentage
GMOs	~10%
Organic	~85%
Natural	~75%
Artificial	~65%

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\_\_\_\_\_

[REDACTED]

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4

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A 10x10 grid of black bars on a white background. The bars are arranged in a pattern where the length of each bar in a row increases from left to right. The first row has 1 bar, the second row has 2 bars, and so on, up to the tenth row which has 10 bars. The bars are solid black and have varying widths.

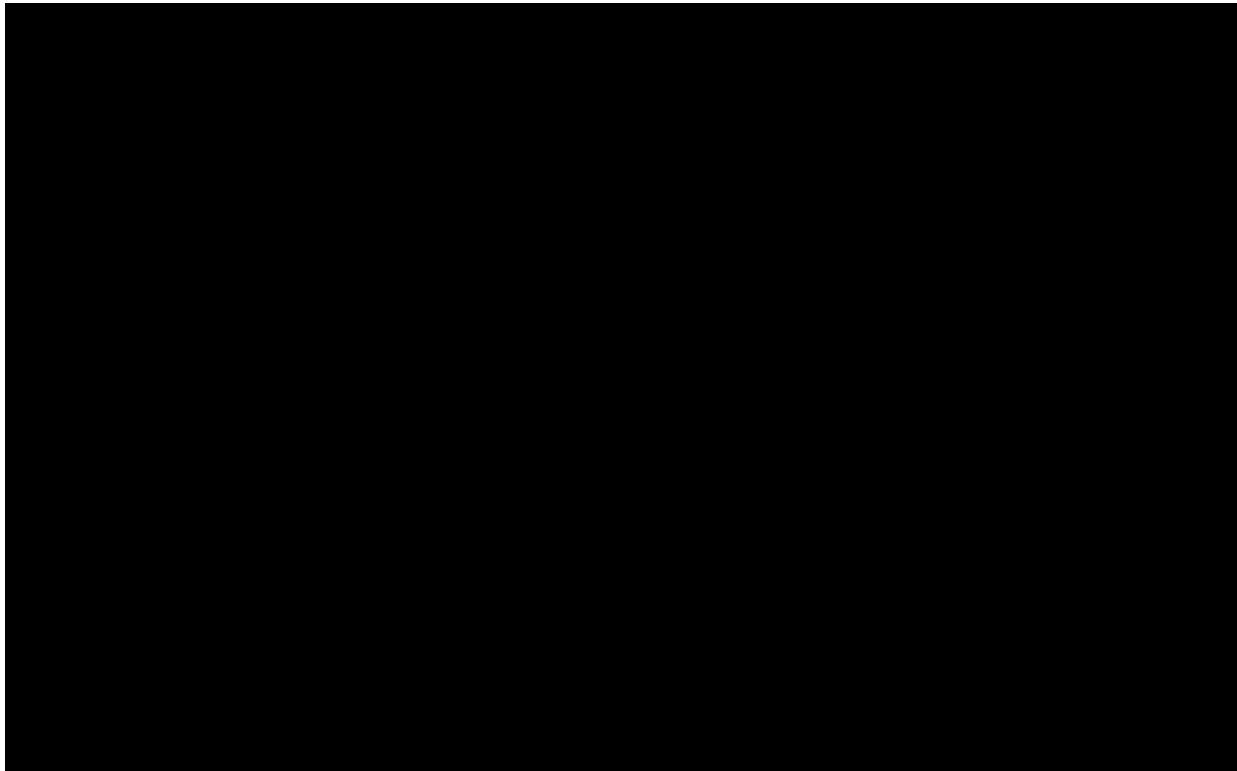
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The figure consists of a 3x6 grid of 18 black rectangles. The rectangles are arranged in three rows and six columns. The top row has a single long rectangle. The middle row has two shorter rectangles in the first and second columns, and a single long rectangle in the third column. The bottom row has a single long rectangle in the first column, and two shorter rectangles in the second, third, and fourth columns.

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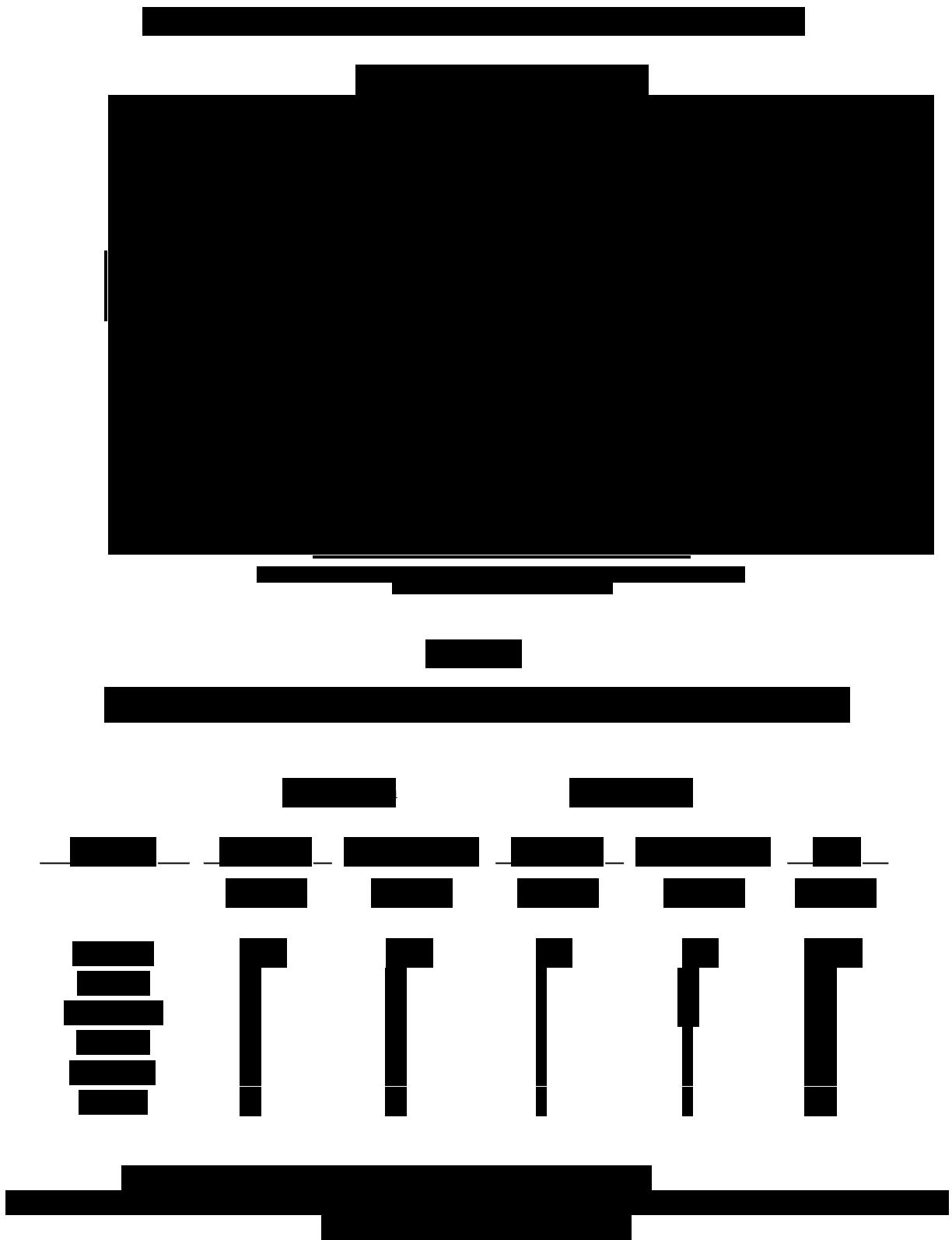
The figure consists of two identical sets of horizontal bars, one above the other. Each set contains 10 bars. The bars are black with a thin white outline. The bars in each set are of equal length. The sets are separated by a thin white horizontal line. There are small black squares at the top and bottom left corners of the figure area.

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The figure consists of three distinct groups of horizontal bars, each representing a different time period. The bars are black and set against a white background. Each group contains 10 bars, and the bars within each group are of equal length. The first group is positioned at the top, the second in the middle, and the third at the bottom. The bars in the first group are the longest, while the bars in the third group are the shortest. The bars in the second group fall in between in terms of length.

11. **What is the primary purpose of the *Journal of Clinical Endocrinology and Metabolism*?**

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A series of six horizontal black bars of varying lengths, decreasing from left to right. The first bar is the longest, followed by a short bar, then a long bar, then a medium bar, then a long bar, and finally the shortest bar on the far right.

Cancer Type	Percentage
Bladder	100
Esophagus	98
Stomach	95
Colon	90
Prostate	85
Liver	80
Bladder	75
Esophagus	70
Stomach	65
Colon	60
Prostate	55
Bladder	50
Esophagus	45
Stomach	40
Colon	35
Prostate	30
Bladder	25
Esophagus	20
Stomach	15
Colon	10
Prostate	5

Term	Percentage
GDP	95
Inflation	98
Interest rates	98
Central bank	98
Monetary policy	98
Quantitative easing	98
Inflation targeting	98
Interest rate hike	98
Interest rate cut	98
Interest rate parity	98
Nominal interest rate	85
Real interest rate	75

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A bar chart showing the percentage of the population aged 15-24 in 2010 for various countries. The y-axis lists countries: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Chile, Costa Rica, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Malta, Mexico, Netherlands, Norway, Poland, Portugal, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States. The x-axis represents the percentage from 0% to 100%. The bars are black and show the following approximate values: Argentina (100%), Australia (98%), Austria (98%), Belgium (98%), Brazil (98%), Bulgaria (98%), Chile (98%), Costa Rica (98%), Czech Republic (98%), Denmark (98%), Finland (98%), France (98%), Germany (98%), Greece (98%), Hungary (98%), Iceland (98%), Ireland (98%), Italy (98%), Japan (98%), Korea (98%), Luxembourg (98%), Malta (98%), Mexico (98%), Netherlands (98%), Norway (98%), Poland (98%), Portugal (98%), Russia (98%), San Marino (98%), Slovakia (98%), Slovenia (98%), Spain (98%), Sweden (98%), Switzerland (98%), Turkey (98%), United Kingdom (98%), and United States (98%).

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The figure consists of four horizontal panels, each containing a series of black horizontal bars of varying lengths. The first panel has 10 bars. The second panel has 4 bars. The third panel has 7 bars. The fourth panel has 10 bars. Each bar is preceded by a small black square marker.

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Country	Percentage (%)
United States	20.8
Canada	19.8
United Kingdom	19.5
Australia	19.2
Germany	18.8
France	18.5
Italy	18.2
Spain	17.8
Portugal	17.5
Greece	17.2

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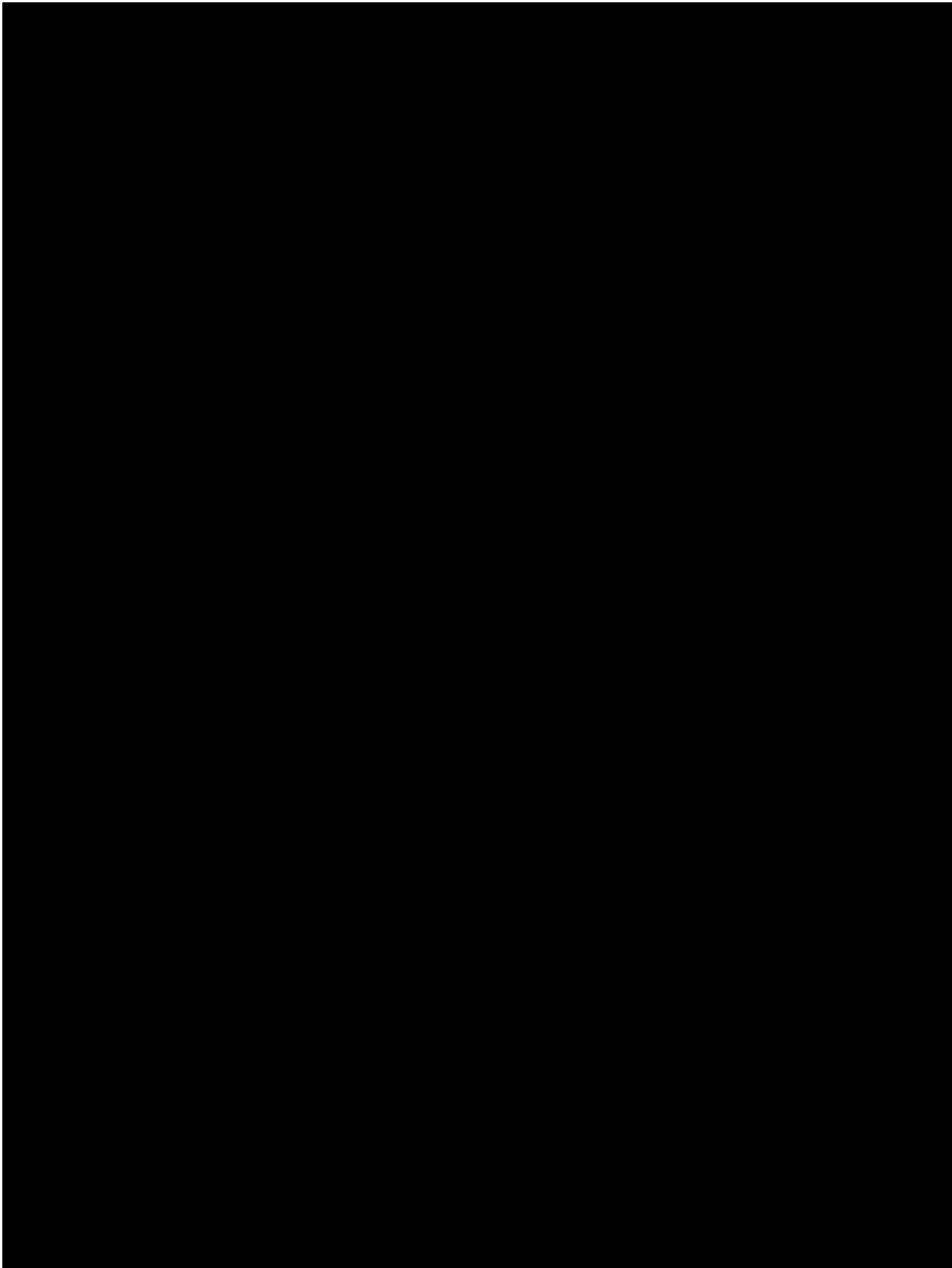
Term	Percentage
GMOs	85
Organic	82
Natural	80
Artificial	75
GMOs	80
Organic	78
Natural	75
Artificial	70
GMOs	75
Organic	72
Natural	68
Artificial	65
GMOs	68
Organic	65
Natural	62
Artificial	58

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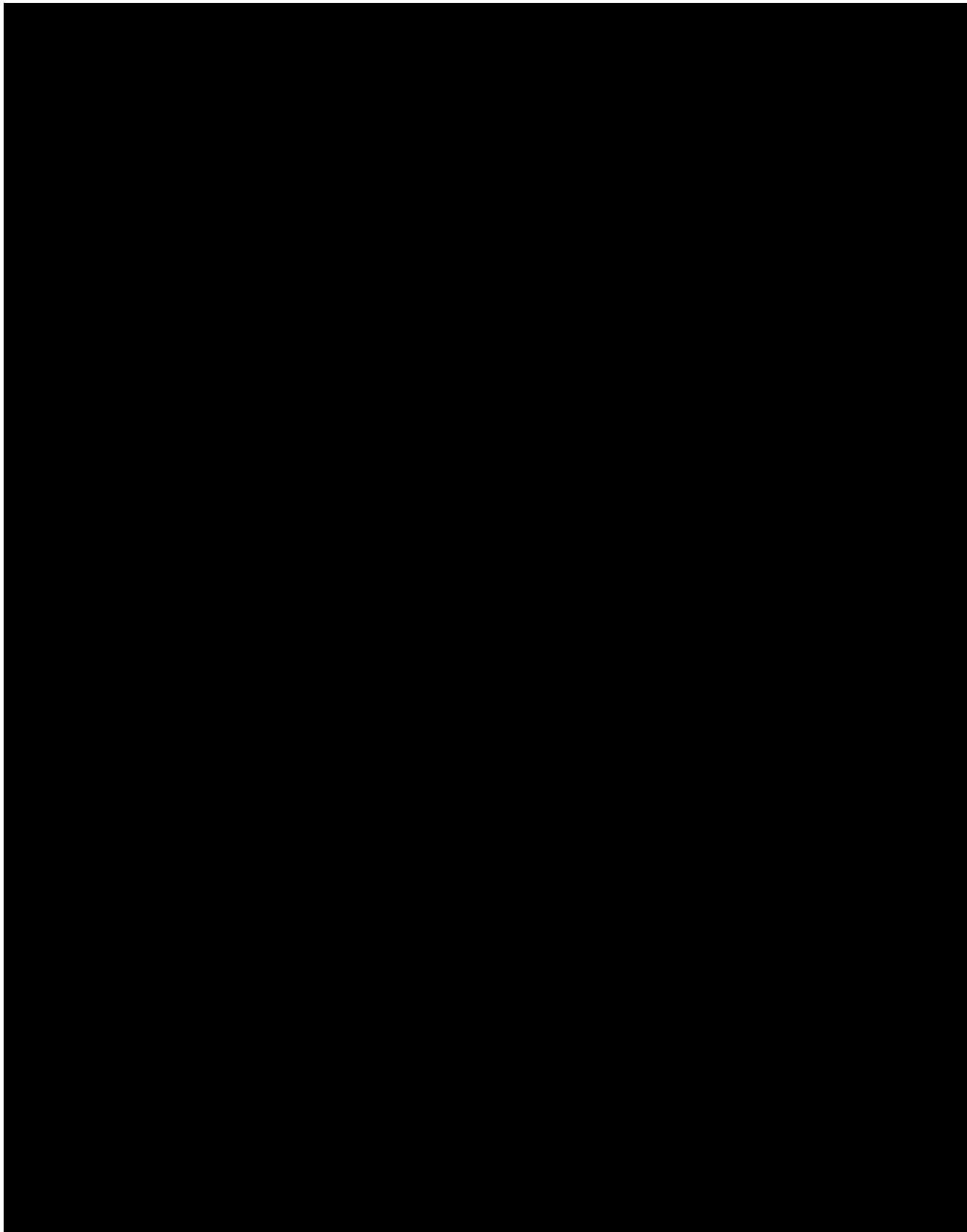
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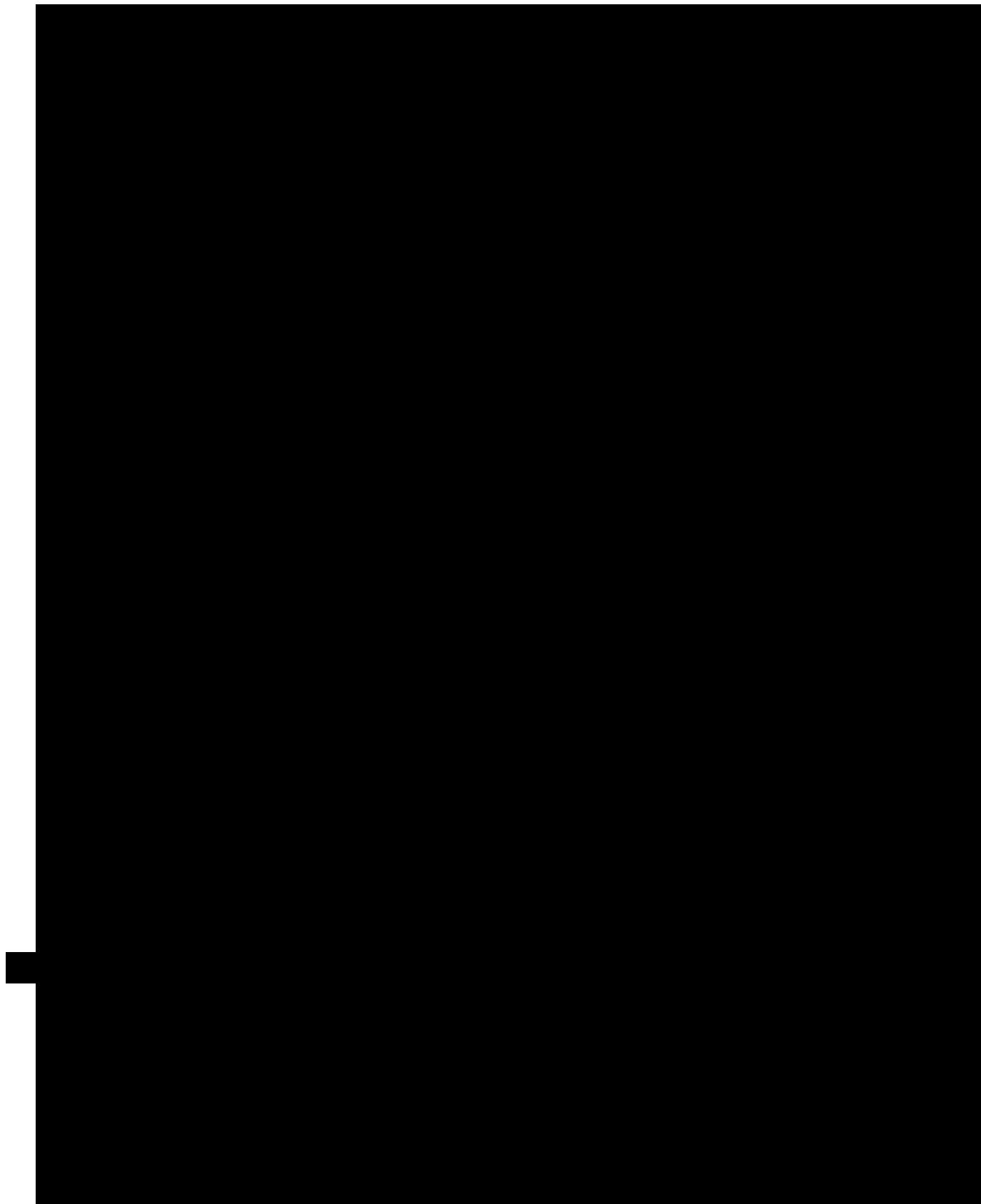
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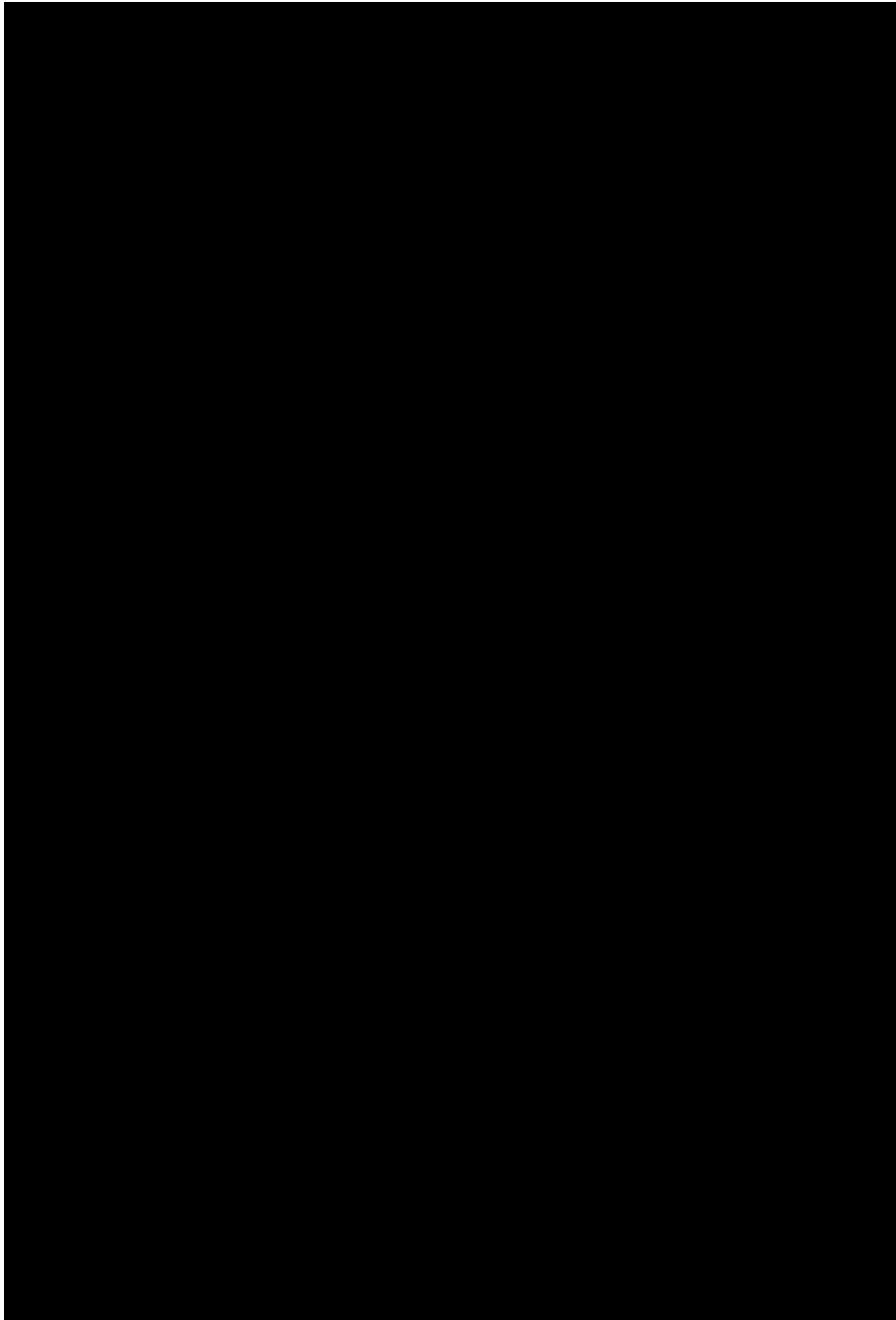
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The figure consists of three vertically stacked bar charts. Each chart has a y-axis with 10 categories, represented by horizontal white lines. The x-axis for each chart ranges from 0 to 100. The top chart has a single bar at approximately 98%. The middle chart has a single bar at approximately 98%. The bottom chart has a single bar at approximately 98%.

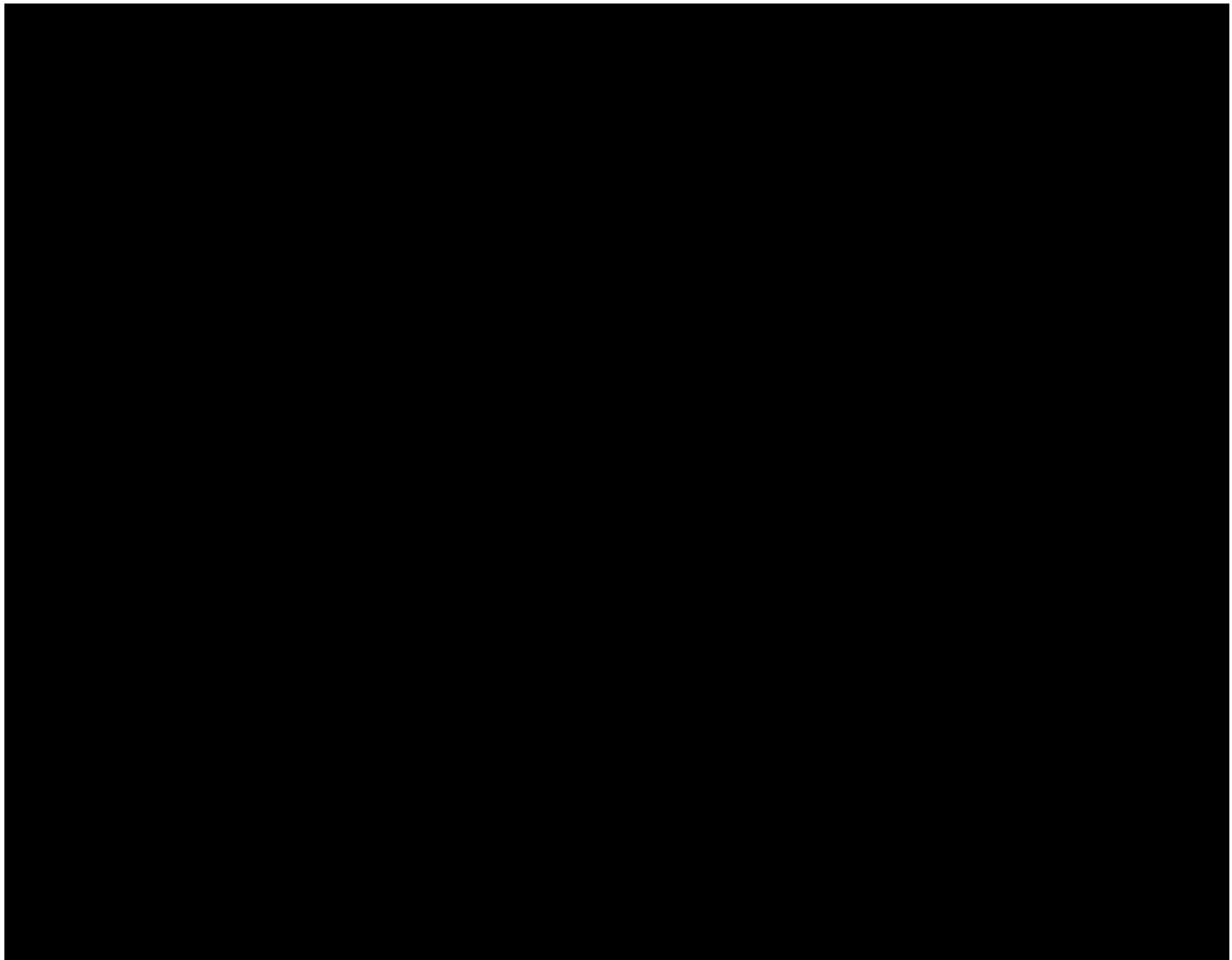
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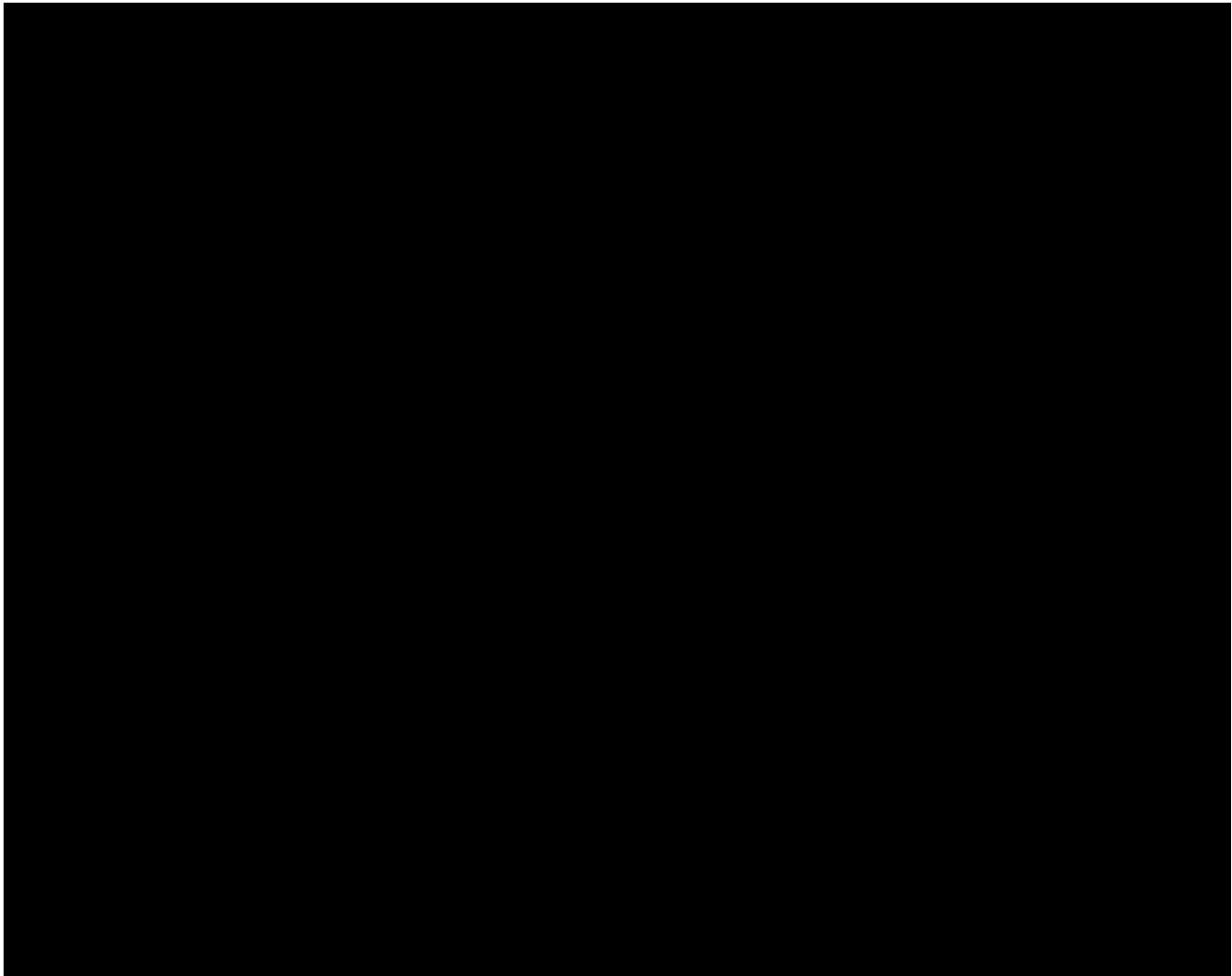
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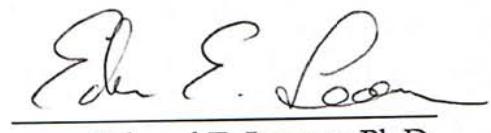
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Edward E. Leamer, Ph.D.



